Estimating the Economic Impact of Secondhand Smoke on Indiana in 2007

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Secondhand smoke costs Indiana \$390.3 million dollars¹ in excess medical expenses, or about \$62 dollars per person each year. The burden of these expenses is assumed by businesses, government, and individual citizens. As daunting as the amount appears, it does not include costs of health care and loss of life of Indiana residents that smoke, which alone is estimated to be over \$2 billion dollars.

Total health care costs attributable to secondhand smoke = 282.5 million dollars

Total loss of life costs attributable to secondhand smoke = 107.8 million dollars

Overall cost of health care and premature loss of life attributed to secondhand smoke for Indiana residents in 2007 = \$390.3 million dollars

Exposure to secondhand smoke causes many medical conditions in adults, including lung cancer, nasal sinus cancer, breast cancer, cervical cancer, ischemic heart disease, stroke, eye and nasal irritation, spontaneous abortions and asthma. In addition, other studies have suggested that exposure to secondhand smoke may be causally associated with adult leukemia, angina pectoris (severe chest pain), hearing loss, allergies, periodontal disease, dysmenorrhea (severe pelvic pain during menstruation), colds, pneumonia, meningitis, macular degeneration, congestive heart failure and cardiac arrhythmia.

Scientific evidence confirms that there is no safe, risk-free level of exposure to secondhand smoke.

Exposure of children to secondhand smoke has been linked to low birth weight, sudden infant death syndrome, respiratory syncytial virus bronchiolitis (RSV), asthma exacerbations, otitis media (middle ear infections), chronic respiratory symptoms, cystic fibrosis exacerbation, allergies, meningitis, loss of hearing and cognitive behavioral impairment. In addition, many adults and children are injured in fires started by smoking.

At least 1,194 adults, children and infants in Indiana died in 2007 from diseases definitively tied to secondhand smoke by the US Surgeon General (not including approximately 49 spontaneous abortions). These lives lost are entirely preventable.

¹ Based on data from 2006, reported in 2007 dollars.

Adults: Number of Deaths and Medical Costs for Selected Secondhand Smoke Related Conditions State of Indiana, 2007

_	# Deaths and	Costs per	Total Cost
	# Hospitalizations	Hospitalization (Adjusted	(Adjusted to
Disease	due to secondhand smoke exposure	to 2007 Dollars)	2007 Dollars)
Lung	176 hospitalizations	\$27,526	\$4,844,648 hospitalization
Cancer	88 deaths		\$30,298,589 loss of life
Nasal Sinus	8 hospitalizations	\$27,855	\$222,842 hospitalization
Cancer	1 death		\$261,729 loss of life
Heart Disease	4,861 hospitalizations	\$32,109	\$156,083,956 hospitalization
(CHD)	824 deaths		\$0 loss of life
Breast	40 hospitalizations	\$18,123	\$724,908 hospitalization
Cancer	11 deaths		\$19,071,197
Stroke	10 hospitalizations	\$17,383	\$173,828 hospitalization
	241 deaths		\$0 loss of life
Cervical	37 hospitalizations	\$20,311	\$751,519 hospitalization
Cancer	8 deaths		\$8,785,190 loss of life
Asthma	2,821 hospitalizations	\$18,229	\$51,425,285 hospitalization
	10 deaths		\$7,852,609 loss of life
		Total Hospitalization Costs =	\$214,226,986
		Total Loss of Life Costs =	\$66,269,313
		Total Costs	\$280,496,299

<u>Children</u>: Number of Deaths and Medical Costs for Selected Secondhand Smoke Related Conditions State of Indiana, 2007

-	# Deaths & Health Care Utilization	Costs per Case (Adjusted to	Total Cost (Adjusted to
Disease	Due to secondhand smoke exposure	2007 Dollars)	2007 Dollars)
Sudden Infant Death	9 deaths		\$36,686,654 loss of life
Syndrome			
Respiratory Syncytial Virus	349 hospitalizations	\$8,512	\$2,970,591 hospitalization
Bronchiolitis	0 deaths		\$0 loss of life
Acute Otitis Media	18,261 office visits	\$124	\$2,273,263 office visits
	84 hospitalizations	\$7,522	\$631,876 hospitalizations
Asthma	5,321 episodes	\$57	\$301,260 office visits
	351 hospitalizations 1 death	\$884	\$3,130,365 hospitalizations \$1,967,208 loss of life
Acute Lower Respiratory, Bronchitis,	1,913 hospitalizations	\$21,904	\$41,903,062 hospitalizations
Pneumonia	0 deaths		\$0 loss of life
Burns	6 hospitalizations 1 death	\$44,054	\$264,321 hospitalizations \$2,826,965 loss of life
Low Birth Weight	554 LBW births	\$21,754	\$12,051,752 other
Extreme Low Birth Weight	58 Ex LBW	\$75,460	\$4,376,707
Spontaneous Abortion	49 spontaneous abortions	\$8,313	\$407,323 hospitalizations
		Total Health Care Costs =	\$68,310,521
		Total Loss of Life Costs =	\$41,480,827
		Total Costs	\$109,791,348

<u>Citation</u>: Zollinger, T., Saywell, R., Muegge, C., Przybylski, M. Estimating the Economic Impact of Secondhand Smoke on Indiana in 2007. Bowen Research Center – Indiana University School of Medicine, June 2008.

The full study can be found at: <u>www.itpc.in.gov</u> on the Evaluation and Research: Key Reports and Research Articles page.

References

Aligne CA, Stoddard JJ. Tobacco and children: an economic evaluation of the medical effects of parental smoking. Arch Pediatr Adolesc Med 1997;151:648-653.

Indiana State Department of Health. US and Indiana Data from BRFSS 2007. http://www.in.gov/isdh/files/brfss 05 15 07.pdf, accessed June 22, 2008.

National Center for Health Statistics, http://www.cdc.gov/nchs/fastats/lifexpec.htm, accessed January 20, 2008

Office of Environmental Health Hazard Assessment. Health Effects of Exposure to Environmental Tobacco Smoke. Berkeley, CA: California Environmental Protection Agency; 2005.

Population Division, U.S. Census Bureau, *Annual Estimates of the Population for the United States, Regions, States, and Puerto Rico: April 1, 2000 to July 1, 2007* (NST-EST2007-01) Population Division, U.S. Census Bureau, December 27, 2007.

http://www.stats.indiana.edu/population/PopTotals/2007 stateest.html, accessed March 10, 2008.

- U.S. Department of Health and Human Services. *Sustaining State Programs for Tobacco Control, State Highlights*, 2006. Atlanta, GA: Centers for Disease Control and Prevention; 2006.
- U.S. Department of Health and Human Services. *The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General,* US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2006.
- US Department of Labor, http://www.bls.gov/cpi/home.htm, accessed March 8, 2008.

US Department of Transportation, http://ostpxweb.ost.dot.gov/policy/EconStrat/treatmentoflife.htm, accessed March 8, 2008.